

**REMARKS**

Applicants request reconsideration and allowance of the present application in view of the foregoing amendments and the following remarks.

**I. STATUS OF THE CLAIMS**

Claims 1, 3-8, 10-15, and 17-33 are pending in the present application. Claims 1, 8, 15, 19, 21, 23, 25, 27, 29, 30, and 32 are the independent claims.

Claims 1, 3-8, 10-15, and 17-19 have been amended. Claims 20-33 are newly-presented. Claims 2, 9, and 16 were previously cancelled without prejudice to or disclaimer of the subject matter recited therein. No new matter is believed to have been added.

**II. REJECTIONS OF THE CLAIMS**

Claims 1, 3-8, 10-15, and 17-19 stand rejected under 35 USC §103(a) as being obvious over U.S. Patent No. 5,285,306 (Heidemann), or U.S. Patent No. 5,546,213 (Suyama), or U.S. Patent No. 6,452,721 (Deguchi et al.), when taken with (OFC '99) or (Walker) and with (OECC) or U.S. Patent No. 6,344,922 (Grubb et al.). These rejections are respectfully traversed.

**III. TRAVERSAL OF THE § 103 REJECTION**

Independent claim 1 recites, inter alia, that when a plurality (m) of pumping lights of different wavelengths are supplied to a Raman amplification medium, a supervisory signal is selectively superimposed on at least one of 1 through (m-1) of the plurality of pumping lights of different wavelengths.

Independent claim 8 recites, inter alia, that a Raman amplifier has a plurality of pumping light sources which generate a plurality (m) of pumping lights of different wavelengths and that a supervisory signal superimposing section selectively superimposes a supervisory signal on at least one of 1 through (m-1) of the plurality of pumping lights of different wavelengths supplied to the Raman amplification medium from the respective pumping light sources.

Independent claim 15 recites, inter alia, that Raman amplifier has a plurality of pumping light sources which generate a plurality (m) of pumping lights of different wavelengths and that a supervisory signal superimposing section selectively superimposes a supervisory signal on at least one of 1 through (m-1) of the plurality of pumping lights of different wavelengths supplied to a Raman amplification medium . . . .

Independent claim 19 recites, inter alia, supplying a plurality (m) of pumping lights of different wavelengths to a Raman amplification medium to Raman amplify a wavelength division

multiplexed signal light propagating through the Raman amplification medium and selectively superimposing a supervisory signal on at least one of 1 through (m-1) of the plurality of pumping lights.

By the aforementioned features of independent claims 1, 8, 15, and 19, a supervisory signal can be selectively superimposed on at least one of a plurality of pumping lights rather than imposing the supervisory signal over the entire wavelength of the wavelength division multiplexed (WDM) signal. Indeed, as explained at, for example page 3, lines 5-9 of the Specification, a more efficient supervisory signal can be selectively superimposed on a wavelength band which, for example, exhibits good excitation efficiency.

Applicants respectfully submit that none of Heidemann, Suyama, Deguchi et al., OFC '99, Walker, OECC, or Grubb et al., either alone or in combination (assuming arguendo that these documents may be properly combined as proposed in the Office Action), teaches or suggests at least the aforementioned features of independent claims 1, 8, 15, and 19.

At page 3 of the Office Action, it is stated that Heidemann, Suyama, and Deguchi, et al. disclose an optical signal transmission method using fiber optic amplifiers wherein a supervisory signal is imposed on the pumping light supplied to the amplifying medium. However, absent from these three citations is any teaching or suggestion of the aforementioned features of independent claims 1, 8, 15, and 19.

OFC '99 and Walker are cited for their alleged teachings of the use of Raman amplifiers instead of doped fiber amplifiers and the benefits of WDM signal transmission. OECC and Grubb et al. are cited for their alleged teachings of the use of plural pump wavelengths to pump Raman amplifiers operating in WDM modes. (Office Action, page 4). Applicants respectfully submit that none of OFC '99, Walker, OECC, and Grubb et al. add anything to the teachings of Heidemann, Suyama, and Deguchi, et al. that would remedy the aforementioned deficiency.

Lastly, Applicants note that the Office Action repeatedly mischaracterizes the present invention as merely superimposing supervisory signals on a pump wavelength (See e.g., Office Action, page 3, lines 11-13, page 5, lines 1-6). Absent from the Office Action of any contention that the concept of selective superimposition of a supervisory signal is either taught or suggested by the citations of record.

Accordingly, reconsideration and withdrawal of the rejection of independent claims 1, 8, 15 and 19 under 35 U.S.C. § 103 are respectfully requested.

IV. CONCLUSION

In view of the foregoing, Applicants respectfully submit that the independent claims patentably define the present invention over the citations of record. Further, the dependent claims should also be allowable for the same reasons as their respective base claims and further due to the additional features that they recite. Separate and individual consideration of the dependent claims is respectfully requested.

Applicants believe that the present Amendment is responsive to each of the points raised by the Examiner in the Official Action. However, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to such matters.

Applicants submit that this Amendment After Final Rejection clearly places the subject application in condition for allowance. This Amendment was not earlier presented because Applicants believed that the prior Amendment placed the subject application in condition for allowance. Accordingly, entry of the instant Amendment as an earnest attempt to advance prosecution and reduce the number of issues, is requested under 37 C.F.R. § 1.116.

There being no further outstanding objections or rejections, it is submitted that the present application is in condition for allowance. An early action to that effect is courteously solicited.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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